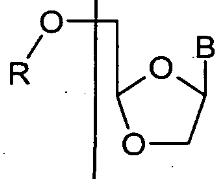
10049269.101902

We claim

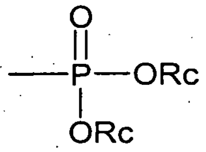
1. A method for treating a patient with leukemia in a host comprising:

administering to a patient having chronic myelogenous leukemia or acute myelogenous leukemia, a therapeutically effective amount of a compound having the formula I:



(I)

wherein B is cytosine or 5-fluorocytosine and R is selected from the group comprising H, monophosphate, diphosphate, triphosphate, carbonyl substituted with a C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, and



$$-\overset{\displaystyle O}{\overset{\|}{\underset{\displaystyle ORc}{\underset{|}{P}}}}-ORc$$

wherein each **Rc** is independently selected from the group comprising H, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl and an hydroxy protecting group; and
wherein said compound is substantially in the form of the (-) enantiomer.

2. The method according to claim 1, wherein the step of administering comprises administering to a patient that has been previously treated with Ara-C.

3. The method according to claim 2, wherein R is H.

4. The method according to claim 2, wherein B is cytosine.

5. The method according to claim 2, wherein R is H and B is cytosine.

6. The method according to claim 4, wherein said compound of formula I is at least 95% free of the (+) form.

7. The method according to claim 4, wherein said compound of formula I is at least 97% free of the (+) form.

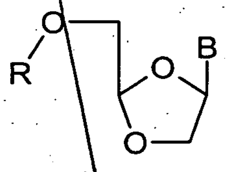
8. The method according to claim 4, wherein said compound of formula I is at least 99% free of the (+) form.

9. The method of claim 2, wherein the leukemia is a chronic myelogenous leukemia.

10. The method of claim 2, wherein the leukemia is an acute myelogenous leukemia.

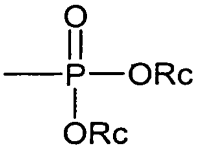
Sub A2

11. A method for treating leukemia in a host comprising administering to the host having leukemia a therapeutically effective amount of at least one compound of general formula I



(I)

wherein B is cytosine or 5-fluorocytosine and R is selected from the group comprising H, monophosphate, diphosphate, triphosphate, carbonyl substituted with a C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{6-10} aryl, and



$-P(=O)(ORc)ORc$

wherein each **Rc** is independently selected from the group comprising H, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl and an hydroxy protecting group, and wherein said compound is substantially in the form of the (-) enantiomer; and

administering doxarubicin to a patient.

13. The method according to claim 11, wherein the leukemia is chronic myelogenous leukemia.

14. The method according to claim 11, wherein the leukemia is acute myelogenous leukemia.

15. The method according to claim 11, further comprising the step of administering a multidrug resistance reversing agent or a biological response modifier.

16. The method according to claim 15, wherein the multidrug resistance agent is PSC 833.

17. The method according to claim 15, wherein the biological response modifiers are selected from the group consisting of monoclonal antibodies and cytokines.

18. The method according to claim 15, wherein the cytokines are selected from the group consisting of interferons, interleukins and colony-stimulating factors.

19. The method according to claim 15, wherein the biological response modifiers are selected from the group consisting of Rituxan, CMA-676, Interferon-alpha recombinant, Interleukin-2, Interleukin-3, Erythropoetin, Epoetin, G-CSF, GM-CSF, Filgrastim, Sargramostim and Thrombopoietin.

10046292.011602

20. The method according to claim 11, wherein the compound of formula I and the doxorubicin are administered sequentially.

21. The method according to claim 11, wherein the compound of formula I and the doxorubicin are administered simultaneously.

a add 3 A

add B1

add C3

10049286.011902